T. Holland (handwritten)

Re-R(1) (handwritten)

OIPE

RAW SEQUENCE LISTING   DATE: 12/12/2001
PATENT APPLICATION: **US/09/830,703**   TIME: 11:51:43

Input Set : **A:\seqlist.txt**
Output Set: **N:\CRF3\12112001\I830703.raw**

ENTERED (stamp)

```
 4 <110> APPLICANT: Biofrontera Pharmaceuticals AG
 5       Lubbert, Hermann
 7 <120> TITLE OF INVENTION: TRANSGENIC ANIMAL MODEL FOR
 8       NEURODEGENERATIVE DISEASES
10 <130> FILE REFERENCE: STERN1.001APC
12 <140> CURRENT APPLICATION NUMBER: 09/830,703
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C--> `13 <141> CURRENT FILING DATE: 2001-12-12`
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15 <150> PRIOR APPLICATION NUMBER: EP 99116766.9
16 <151> PRIOR FILING DATE: 1999-08-30
18 <160> NUMBER OF SEQ ID NOS: 34
20 <170> SOFTWARE: FastSEQ for Windows Version 4.0
22 <210> SEQ ID NO: 1
23 <211> LENGTH: 3255
24 <212> TYPE: DNA
25 <213> ORGANISM: Mus musculus
27 <400> SEQUENCE: 1
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29 aggctcgggc gggcgccagt gcccgcgtag gtccttctcg acccgcagcc accacccgcc 120
30 cggtgaccat gatagtgttt gtcaggttca actccagcta tggcttccca gtggaggtcg 180
31 attctgacac cagcatcttg cagctcaagg aagtggttgc taagcgacag ggggttccag 240
32 ctgaccagct gcgtgtgatt tttgccggga aggagcttcc gaatcacctg acggttcaaa 300
33 actgtgacct ggaacaacag agtattgtac acatagtaca gagaccacgg aggagaagtc 360
34 atgaaacaaa tgcatctgga ggggacgaac cccagagcac ctcagagggc tccatatggg 420
35 agtccaggag cttgacacga gtggacctga gcagccatac cctgccggtg gactctgtgg 480
36 ggctggcggt cattctggac acagacagta agagggattc agaagcagcc agaggtccag 540
37 ttaaacccac ctacaacagc ttttttcatct actgcaaagg cccctgccac aaggtccagc 600
38 ctggaaagct ccgagttcag tgtggcacct gcaaacaagc aaccctcacc ttggcccagg 660
39 gcccatcttg ctgggacgat gtcttaattc caaaccggat gagtggtgag tgccagtctc 720
40 cagactgccc tggaaccaga gctgaatttt tctttaaatg tggagcacac ccaacctcag 780
41 acaaggacac gtcggtagct ttgaacctga tcaccagcaa caggcgcagc atcccttgca 840
42 tagcgtgcac agatgtcagg agccctgtcc tggtcttcca gtgtaaccac cgtcacgtga 900
43 tctgtttgga ctgtttccac ttgtattgtg tcacaagact caacgatcgg cagtttgtcc 960
44 acgatgctca acttggctac tccctgccgt gtgtagctgg ctgtcccaac tccctgatta 1020
45 aagagctcca tcacttcagg atccttggag aagagcagta cactaggtac cagcagtatg 1080
46 gggccgagga atgcgtgctg caaatgggag gtgtgctgtg cccccgtcct ggctgtggag 1140
47 ctggactgct acctgaacag ggccagagga aagtcacctg cgaaggggggc aacggcctgg 1200
48 gctgcgggtt tgttttctgc cgggactgta aggaagcata ccatgaaggg gattgcgact 1260
49 cactgctcga accctcagga gccacttctc aggcctacag ggtggacaaa agagccgctg 1320
50 agcaagctcg ctgggaggag gcctccaagg aaaccatcaa gaagaccacc aagccttgtc 1380
51 ctcgctgcaa cgtgccaatt gaaaaaaacg gaggatgtat gcacatgaag tgtcctcagc 1440
52 cccagtgcaa gctggagtgg tgctggaact gtggctgtga gtggaaccga gcctgcatgg 1500
53 gagatcactg gtttgacgtg tagagagaga tgtcacttgg ccctggacgc acaacctcaa 1560
54 gggaaactcc gaagattcct accttcctta gccattctt cttctcgatg catataagca 1620
55 cataaatgcg cacacacaaa cacaggctgc agattacaga agcagcccct agatcctttc 1680
56 tagggcaccc acagaaaacc acagcacccg ctggccccag ggggaggagg cactttcagc 1740
57 ctctggctca ctcgaatgtc agagcttaga tgagggtgca cctttggttt ggattctgta 1800
58 gaagccatga gtgaggtggg aagtgttttc cagggttgtt gccacgccct gggtaagtaa 1860
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RAW SEQUENCE LISTING   DATE: 12/12/2001
PATENT APPLICATION: US/09/830,703   TIME: 11:51:43

        Input Set : A:\seqlist.txt
        Output Set: N:\CRF3\12112001\I830703.raw

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59 cacctctgag gattctcaga agcacacttg agatctgagg aacgctgctc tcatgtagta 1920
60 atcatctatt cccaaagggc cccctgcagt agtcaaaact atttgtttat cccccaaat 1980
61 cctatcttta caaatggtgc tgatgagatt acaacccctc tgtgtactaa tcagcttatc 2040
62 aaccaagtga gaacctagga aagctaattg gatggcagac tgcttaaatc gcagggagga 2100
63 ctcagaagcc aaacctactt ccgttcgttt cattatctgc aactttagaa agaaatgatc 2160
64 ttttttccc cctgaaaaga taacaaagtc tgcaatttgg tttggagtat tcctactgca 2220
65 gcctggaagt ttagcttcac tgtgaattta acagagaaag tgcctataaa gggggcgttt 2280
66 ttaagagaca atcccatgat gctgcgccaa tgctaacaac agggtcaaga aacacaatgt 2340
67 ttatagaagg agcatccctc gaccatctga atgagagtat gcctgacccc ttccaccaca 2400
68 agtggggaca cctctgcata tctgctccct cctctgctgt taagccccag ggagccccat 2460
69 ccacccagtg gtcctacaga cagggcaata cacacacacc aagatagcct tcagatcaac 2520
70 atgcatcaca ctcaagtgtt aatctttcaa ggtttctttt tctttttcct gttttttatt 2580
71 tgttttgctt ttgctttttt tttttttttt tttggtggtg gtggggctac caaacttgag 2640
72 gcctagagct aaaaatcata tagaaatgat gttatcttgt ggtgtgagga aaggccagct 2700
73 ggcctaagtt cacacttttg tcccagtggc cctagactcc acccagccag ctcccaaaat 2760
74 gaaaagacca cctgtcaagc agcagtcagg agtctgatgt cacccatcac tatttttttt 2820
75 ccatcattgt gcttgcctct gcctccttcc acacccgtgt gacgtaatcg cattgggaag 2880
76 ccaggacaat gtttgctgtt ctgctttggg taaagggact ccctgaagct ctgtggctct 2940
77 ccagtatggt ccctttttcct tcctaacaga tgcatatgtt ttcttcagaa tacaatagtg 3000
78 attcttaaaa taacccaaaa gacaggcatc cacagtgtgt gagcatgaat cacagcctgc 3060
79 attgtgtgag tgtgaatagt gggataaaag tggatgtcag aagagtggaa atcaaacctc 3120
80 tgcaaagcaa tctttctctt tctgtgaagt gtattaagaa atacctgaag tctgtgtgtg 3180
81 tggtggtacc cagactgtca atcaataaag acccagactg tcaatgaaaa aaaaaaaaaa 3240
82 aaaaaaaaaa aaaaa                                                   3255
84 <210> SEQ ID NO: 2
85 <211> LENGTH: 1459
86 <212> TYPE: DNA
87 <213> ORGANISM: Mus musculus
89 <400> SEQUENCE: 2
90 ctcacgggga ggaggccttg gatgactaaa cctgacagaa acgctggtgg gaggctcggg 60
91 cgggcgccag tgcccgcgta ggtccttctc gacccgcagc caccacccgc ccggtgacca 120
92 tgatagtgtt tgtcaggttc aactccagct atggcttccc agtggaggtc gattctgaca 180
93 ccagcatctt gcagctcaag gaagtggttg ctaagcgaca gggggttcca gctgaccagc 240
94 tgcgtgtgat ttttgccggg aaggagcttc cgaatcacct gacggttcaa aactgtgacc 300
95 tggaacaaca gagtattgta cacatagtac agagaccacg gaggagaagt catgaaacaa 360
96 atgcatctgg aggggacgaa ccccagagca cctcagaggg ctccatatgg gagtccagga 420
97 gcttgacacg agtggacctg agcagccata ccctgccggt ggactctgtg gggctggcgg 480
98 tcattctgga cacagacagt aagagggatt cagaagcagc cagaggtcca gcagttaaac 540
99 ccacctacaa cagctttttc atctactgca aaggcccctg ccacaaggtc cagcctggaa 600
100 agctccgagt tcagtgtggc acctgcaaac aagcaaccct caccttggcc cagggcccat 660
101 cttgctggga cgatgtctta attccaaacc ggatgagtgg tgagtgccag tctccagact 720
102 gccctggaac cagagctgaa tttttctttta aatgtggagc acacccaacc tcagacaagg 780
103 acacgtcggt agctttgaac ctgatcacca gcaacaggcg cagcatccct tgcatagcgt 840
104 gcacagatgt cagtcatctt cctctgtcat ctggtgcctc cgtgtggact cggcctcatc 900
105 tccactgaac cttgttcttt aggactgtgc aataggtcgt cacctcctac tgagaacaag 960
106 gcagcttctg gtctcttggt ttccttgctt ccaacggcag cattgactgt acacccttca 1020
107 gtcctaccaa ccccattacc tggttgattt ctttaccgct tagcttctcc aagatgccta 1080
108 tttccacaca cagtttcttg tcttccccat ccccccatag gtttatgcgc atgagtaagc 1140
109 accgcacctc atgagtttgt gcttctgata caagacttcc tgggatcccc gcttgagccc 1200
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RAW SEQUENCE LISTING   DATE: 12/12/2001
PATENT APPLICATION: US/09/830,703   TIME: 11:51:43

    Input Set : **A:\seqlist.txt**
    Output Set: **N:\CRF3\12112001\I830703.raw**

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110 tagaatcccc tggaactggg ttcagtcacc tatcttcaat agcctctttt aaaagtgagt 1260
111 tcttgggctg gtgagatggc tcagtgggta agagcacccg actgctcttc cgaagtccag 1320
112 agttcaaaat cccagcaacc acatggtggc tcacaaccat ccgtaacaag atctgactcc 1380
113 ctcttctggt gtgtctgaag acagctacag tgtacttaca taaataata aataaatctt 1440
114 aaaaaaaaaa aaaaaaaaa                                              1459
116 <210> SEQ ID NO: 3
117 <211> LENGTH: 857
118 <212> TYPE: DNA
119 <213> ORGANISM: Mus musculus
121 <400> SEQUENCE: 3
122 ctcagatgac taaacctgac agaaacgctg gtgggaggct cgggcgggcg ccagtgcccg 60
123 cgtaggtcct tctcgacccg cagccaccac ccgcccggtg accatgatag tgtttgtcag 120
124 gttcaactcc agctatggct tcccagtgga ggtcgattct gacaccagca tcttgcagct 180
125 caaggaagtg gttgctaagc gacagggggt tccagctgac cagctgcgtg tgattttttgc 240
126 cgggaaggag cttccgaatc acctgacggt tcaaaactgt gacctggaac aacagagtat 300
127 tgtacacata gtacagagac cacggaggag aagtcatgaa acaaatgcat ctggagggga 360
128 cgaacccccag agcacctcag agggctccat atgggagtcc aggagcttga cacgagtgga 420
129 cctgagcagc cataccctgc cggtggactc tgtgggggctg gcggtcattc tggacacaga 480
130 cagtaagagg gattcagaag cagccagagg tccagcagtt aaacccacct acaacagctt 540
131 tttcatctac tgcaaaggcc cctgccacaa ggtccagcct ggaaagctcc gagttcagtg 600
132 tggcacctgc aaacaagcaa ccctcacctt ggcccagggc ccatcttgct gggacgatgt 660
133 cttaattcca aaccggatga gtggtgagtg ccagtctcca gactgccctg gaaccagagc 720
134 tgaattttttc tttaaatgtg gagcacaccc aacctcagac aaggacacgt cggtagcttt 780
135 gaacctgatc accagcaaca ggcgcagcat cccttgcata gcgtgcacag atgtcaggtt 840
136 tatgcgcatg agttagc                                                857
138 <210> SEQ ID NO: 4
139 <211> LENGTH: 464
140 <212> TYPE: PRT
141 <213> ORGANISM: Mus musculus
143 <400> SEQUENCE: 4
144 Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu
145 1               5                   10                  15
146 Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
147             20                  25                  30
148 Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
149         35                  40                  45
150 Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln
151     50                  55                  60
152 Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
153 65                  70                  75                  80
154 Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile
155                 85                  90                  95
156 Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu
157                 100                 105                 110
158 Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys
159         115                 120                 125
160 Arg Asp Ser Glu Ala Ala Arg Gly Pro Val Lys Pro Thr Tyr Asn Ser
161     130                 135                 140
162 Phe Phe Ile Tyr Cys Lys Gly Pro Cys His Lys Val Gln Pro Gly Lys
```

RAW SEQUENCE LISTING   DATE: 12/12/2001
PATENT APPLICATION: US/09/830,703   TIME: 11:51:43

Input Set : **A:\seqlist.txt**
Output Set: **N:\CRF3\12112001\I830703.raw**

```
163 145                    150              155                    160
164 Leu Arg Val Gln Cys Gly Thr Cys Lys Gln Ala Thr Leu Thr Leu Ala
165                    165              170              175
166 Gln Gly Pro Ser Cys Trp Asp Asp Val Leu Ile Pro Asn Arg Met Ser
167                180              185              190
168 Gly Glu Cys Gln Ser Pro Asp Cys Pro Gly Thr Arg Ala Glu Phe Phe
169         195              200              205
170 Phe Lys Cys Gly Ala His Pro Thr Ser Asp Lys Asp Thr Ser Val Ala
171     210              215              220
172 Leu Asn Leu Ile Thr Ser Asn Arg Arg Ser Ile Pro Cys Ile Ala Cys
173 225              230              235              240
174 Thr Asp Val Arg Ser Pro Val Leu Val Phe Gln Cys Asn His Arg His
175                245              250              255
176 Val Ile Cys Leu Asp Cys Phe His Leu Tyr Cys Val Thr Arg Leu Asn
177            260              265              270
178 Asp Arg Gln Phe Val His Asp Ala Gln Leu Gly Tyr Ser Leu Pro Cys
179         275              280              285
180 Val Ala Gly Cys Pro Asn Ser Leu Ile Lys Glu Leu His His Phe Arg
181     290              295              300
182 Ile Leu Gly Glu Glu Gln Tyr Thr Arg Tyr Gln Gln Tyr Gly Ala Glu
183 305              310              315              320
184 Glu Cys Val Leu Gln Met Gly Gly Val Leu Cys Pro Arg Pro Gly Cys
185                325              330              335
186 Gly Ala Gly Leu Leu Pro Glu Gln Gly Gln Arg Lys Val Thr Cys Glu
187            340              345              350
188 Gly Gly Asn Gly Leu Gly Cys Gly Phe Val Phe Cys Arg Asp Cys Lys
189         355              360              365
190 Glu Ala Tyr His Glu Gly Asp Cys Asp Ser Leu Leu Glu Pro Ser Gly
191     370              375              380
192 Ala Thr Ser Gln Ala Tyr Arg Val Asp Lys Arg Ala Ala Glu Gln Ala
193 385              390              395              400
194 Arg Trp Glu Glu Ala Ser Lys Glu Thr Ile Lys Lys Thr Thr Lys Pro
195                405              410              415
196 Cys Pro Arg Cys Asn Val Pro Ile Glu Lys Asn Gly Gly Cys Met His
197            420              425              430
198 Met Lys Cys Pro Gln Pro Gln Cys Lys Leu Glu Trp Cys Trp Asn Cys
199         435              440              445
200 Gly Cys Glu Trp Asn Arg Ala Cys Met Gly Asp His Trp Phe Asp Val
201     450              455              460
204 <210> SEQ ID NO: 5
205 <211> LENGTH: 262
206 <212> TYPE: PRT
207 <213> ORGANISM: Mus musculus
209 <400> SEQUENCE: 5
210 Met Ile Val Phe Val Arg Phe Asn Ser Ser Tyr Gly Phe Pro Val Glu
211 1                5                10               15
212 Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
213         20               25               30
214 Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
```

RAW SEQUENCE LISTING   DATE: 12/12/2001
PATENT APPLICATION: US/09/830,703   TIME: 11:51:43

Input Set : **A:\seqlist.txt**
Output Set: **N:\CRF3\12112001\I830703.raw**

```
215             35                    40                   45
216 Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln
217     50                    55                   60
218 Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
219 65                    70                   75                   80
220 Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile
221                   85                   90                   95
222 Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu
223             100                  105                  110
224 Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys
225             115                  120                  125
226 Arg Asp Ser Glu Ala Ala Arg Gly Pro Ala Val Lys Pro Thr Tyr Asn
227     130                  135                  140
228 Ser Phe Phe Ile Tyr Cys Lys Gly Pro Cys His Lys Val Gln Pro Gly
229 145                  150                  155                  160
230 Lys Leu Arg Val Gln Cys Gly Thr Cys Lys Gln Ala Thr Leu Thr Leu
231             165                  170                  175
232 Ala Gln Gly Pro Ser Cys Trp Asp Asp Val Leu Ile Pro Asn Arg Met
233             180                  185                  190
234 Ser Gly Glu Cys Gln Ser Pro Asp Cys Pro Gly Thr Arg Ala Glu Phe
235             195                  200                  205
236 Phe Phe Lys Cys Gly Ala His Pro Thr Ser Asp Lys Asp Thr Ser Val
237     210                  215                  220
238 Ala Leu Asn Leu Ile Thr Ser Asn Arg Arg Ser Ile Pro Cys Ile Ala
239 225                  230                  235                  240
240 Cys Thr Asp Val Ser His Leu Pro Leu Ser Ser Gly Ala Ser Val Trp
241             245                  250                  255
242 Thr Arg Pro His Leu His
243             260
246 <210> SEQ ID NO: 6
247 <211> LENGTH: 250
248 <212> TYPE: PRT
249 <213> ORGANISM: Mus musculus
251 <400> SEQUENCE: 6
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253 1                 5                   10                   15
254 Val Asp Ser Asp Thr Ser Ile Leu Gln Leu Lys Glu Val Val Ala Lys
255             20                   25                   30
256 Arg Gln Gly Val Pro Ala Asp Gln Leu Arg Val Ile Phe Ala Gly Lys
257             35                   40                   45
258 Glu Leu Pro Asn His Leu Thr Val Gln Asn Cys Asp Leu Glu Gln Gln
259     50                    55                   60
260 Ser Ile Val His Ile Val Gln Arg Pro Arg Arg Arg Ser His Glu Thr
261 65                    70                   75                   80
262 Asn Ala Ser Gly Gly Asp Glu Pro Gln Ser Thr Ser Glu Gly Ser Ile
263                   85                   90                   95
264 Trp Glu Ser Arg Ser Leu Thr Arg Val Asp Leu Ser Ser His Thr Leu
265             100                  105                  110
266 Pro Val Asp Ser Val Gly Leu Ala Val Ile Leu Asp Thr Asp Ser Lys
```

VERIFICATION SUMMARY   DATE: 12/12/2001
PATENT APPLICATION: US/09/830,703   TIME: 11:51:44

Input Set : **A:\seqlist.txt**
Output Set: **N:\CRF3\12112001\I830703.raw**

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date

STATISTICS SUMMARY   DATE: 12/12/2001
PATENT APPLICATION: US/09/830,703   TIME: 11:51:44

Input Set : **A:\seqlist.txt**
Output Set: **N:\CRF3\12112001\I830703.raw**

Application Serial Number: US/09/830,703
Alpha or Numeric: Numeric
Application Class:
Application File Date: 12-12-2001
Art Unit: OIPE
Software Application: FastSeq
Total Number of Sequences: 34
Total Nucleotides: 48922
Total Amino Acids: 3874
Number of Errors: 0
Number of Warnings: 0
Number of Corrections: 1

MESSAGE SUMMARY

271 C: 1 (Current Filing Date differs)